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Madison 6, Wisconsin, U.S.

November 22 1951.

Dr. R. Th. Scholtens,  
Rijks Instituut voor de Volksgezondheid  
Starrrenbos 1  
Utrecht. Holland

Dear Dr. Scholtens:

I have read your letter of November 8 with great interest. As it happens, I have been deeply concerned with the problem of recombination in Salmonella since 1947. Only this year, my student, Mr. Zinder has completed a study of genetic interactions in Salmonella typhimurium as a Ph.D. thesis.

We were surprised to find that recombination in Salmonella is very different from Escherichia coli. In fact, it rather closely resembles the so-called "transformation" of pneumococcus (Griffith, Avery et al.).

As to phage types, we have worked extensively with Lillieangen's set of typhimurium. Much as you have published, we find that most of the phage reactions depend on the state of lysogenicity, so that a genetic analysis would not be so fruitful. This does not seem to be so in S. typhi however (at least for the Vi types). Mr. Zinder and another student are just beginning to study these from a genetic viewpoint.

At the present time, Mr. Zinder is finishing his experiments and writing his dissertation. There are so many details to discuss that I think it might be better to wait until this is written and published. When you have read all the details of this work, I will be glad to hear from you if you wish to apply them further. We have no mutants in S. paratyphi B; my previous experience with the nutrition of these strains (Archives Biochem.; 13:287-290, 1948) was not encouraging.

A preliminary abstract of our work is enclosed.

Thank you for the reprints recently sent to me. I shall look forward to a continuing exchange of reprints and other information.

Yours sincerely,

Joshua Lederberg  
Associate Professor of Genetics